Listing of Claims:

Claims 1-14 are pending. Please amend claims 1, 10, 12 and 13 as set forth below. This listing of claims will replace all prior versions and listings of claims in the application:

1. **(currently amended)** An illumination optical system comprising:

a light source which is a discharge gas exciting arc tube of a direct current drive type having a cathode electrode and an anode electrode, and has a light emission area being closer to the cathode electrode than the anode electrode;

an optical integrator which uses a lens array to perform splitting of a luminous flux incident ~~as a generally collimated luminous flux~~ from the light source in a first axis direction in a two-dimensional section orthogonal to a traveling direction of the luminous flux;

a polarization conversion element which includes a polarization beam splitter array, a plurality of 1/2 wave plates, and a mask, the polarization beam splitter array having a plurality of polarization beam splitters arranged ~~in multiple stages~~ corresponding to a plurality of predetermined lens areas in the lens array, each of the 1/2 wave plates rotating a polarization direction of first polarized light substantially 90 degrees out of the first and second polarized light with polarization directions orthogonal to each other split by each of the polarization beam splitters, and the mask covering a plurality of areas out of incident surfaces of the polarization beam splitter array to prevent incident of the second polarized light on each of the 1/2 wave plates,

~~wherein the light source is a discharge gas exciting arc tube of a direct current drive type.~~

each area covered by the mask and each of the 1/2 wave plates are opposed to each other on both sides of the polarization beam splitter array.

2. **(previously amended)** The illumination optical system according to claim 1, wherein the mask has light-transmitting portions, and a luminous flux transmitted through each light-transmitting portion of the mask has light intensity distribution in which light intensity in a substantially central portion thereof is the highest and the light intensity gradually becomes low toward a peripheral portion thereof.

3. **(original)** The illumination optical system according to claim 1, wherein the illumination optical system illuminates an illumination surface in a generally rectangular shape, and the first axis direction is a short side direction of the illumination surface.

4. **(original)** The illumination optical system according to claim 1, further comprising optical intensity converting member for converting light intensity distribution in a second axis direction orthogonal to the first axis direction on the two-dimensional section.

5. **(previously amended)** The illumination optical system according to claim 1, wherein the illumination optical system illuminates an illumination surface with a generally telecentric luminous flux, and light intensity of the luminous flux on the illumination surface varies depending on a deviation angle of an incident ray with respect to a normal to the illumination surface, and

the illumination optical system illuminates the illumination surface such that, in the light intensity distribution, a ratio of angle width at which light intensity reaches half of a peak value in each of two axis directions orthogonal to each other on the illumination surface is an aspect ratio of 2:1 or higher.

6. (original) The illumination optical system according to claim 5, wherein, in the light intensity distribution, a ratio of an angle width at which light intensity reaches half of a peak value in a second axis direction orthogonal to the first axis direction to an angle width at which light intensity reaches half of a peak value in the first axis direction is an aspect ratio of 2:1 or higher.

7. (original) The illumination optical system according to claim 1, wherein the illumination optical system illuminates an illumination surface with a generally telecentric luminous flux, and light intensity of the luminous flux on the illumination surface varies depending on a deviation angle of an incident ray with respect to a normal to the illumination surface, and

in the light intensity distribution, a maximum value of an angle width at which light intensity reaches half of a peak value in one of two axis directions orthogonal to each other on the illumination surface is twice or more a maximum value of an angle width at which light intensity reaches half of a peak value in the other direction.

8. (original) The illumination optical system according to claim 7, wherein, in the light intensity distribution, a maximum value of an angle width at which light intensity reaches half of a peak value in a second axis direction orthogonal to the first axis direction is twice or more a maximum value of an angle width at which light intensity reaches half of a peak value in the first axis direction.

9. (original) A projection display optical system comprising: the illumination optical system according to claim 1; a spatial light modulator which modulates a luminous

flux emerging from the illumination optical system by a group of pixels arranged two-dimensionally; and a projection lens which projects the luminous flux modulated by the spatial light modulator onto a projection surface.

10. **(currently amended)** A projection display apparatus comprising:

a light source which is a discharge gas exciting arc tube of a direct current drive type having a cathode electrode and an anode electrode, and has a light emission area being closer to the cathode electrode than the anode ~~electode~~ electrode;

an optical integrator which uses a lens array to perform splitting of a luminous flux incident ~~as a generally collimated luminous flux~~ from the light source in a first axis direction in a two-dimensional section orthogonal to a traveling direction of the luminous flux;

a polarization conversion element which includes a polarization beam splitter array, a plurality of 1/2 wave plates, and a mask, the polarization beam splitter array having a plurality of polarization beam splitters arranged ~~in multiple stages~~ corresponding to a plurality of predetermined lens areas in the lens array, each of the 1/2 wave plates rotating a polarization direction of first polarized light substantially 90 degrees out of the first and second polarized light with polarization directions orthogonal to each other split by each of the polarization beam splitters, and the mask covering a plurality of areas out of an incident surface of the polarization beam splitter array to prevent incident of the second polarized light on each of the 1/2 wave plates;

a spatial light modulator which modulates a luminous flux emerging from the illumination optical system by a group of pixels arranged two-dimensionally; and

a projection lens which projects the luminous flux modulated by the spatial light modulator onto a projection surface[[.]],

each area covered by the mask and each of the 1/2 wave plates are opposed to each other in both sides of the polarization beam splitter array.

11. **(original)** An image display system comprising: the projection display apparatus according to claim 10; and a screen which forms the projection surface, wherein the image display system allows an observer to observe a projected image with one of divergent reflection light from the screen and divergent transmission light through the screen, each light having predetermined directivity.

12. **(currently amended)** An illumination optical system comprising:

a light source in which a cathode electrode and an anode electrode are provided, and by applying a direct current voltage a discharge gas is excited and light is emitted continuously from an area being closer to the cathode electrode than the anode electrode;

a lens array in which a plurality of lenses are arranged in a first direction substantially orthogonal to an illumination direction, each lens condensing a part of a luminous flux from the light source in the first direction; [[and]]

a mask in which light-transmitting portions transmitting luminous fluxes condensed by the lenses and light-blocking portions blocking the luminous fluxes condensed by the lenses are arranged alternately in the first direction[[.]];

a polarization beam splitter array in which first polarization beam splitters and second polarization beam splitters are arranged alternatively in the first direction, each first polarization beam splitter reflecting a first polarized light out of transmitted light

through the light-transmitting portion and transmitting a second polarized light out of the transmitted light, the polarization direction of the second polarized light being rotated by substantially 90 degrees from the polarization direction of the first polarized light, each second polarization beam splitter reflecting the first polarized light reflected by the first polarization beam splitter in a direction substantially parallel to the transmitting direction of the second polarized light; and

a plurality of wave plates which rotate the polarization direction of the transmitted light substantially 90 degrees, and are provided such that the polarization direction of the second polarized light from the first polarization beam splitters and the polarization direction of the first polarized light from the second polarization beam splitters are aligned with each other,

wherein each light-blocking portions of the mask and each of the wave plates are opposed to each other on both sides of the polarization beam splitter array.

13. **(currently amended)** A projection display apparatus comprising:

a light source in which a cathode electrode and an anode electrode are provided, and by applying a direct current voltage a discharge gas is excited and light is emitted continuously from an area being closer to the cathode electrode than the anode electrode;

a lens array in which a plurality of lenses are arranged in a first direction substantially orthogonal to an illumination direction, each lens condensing a part of a luminous flux from the light source in the first direction;

a mask in which light-transmitting portions transmitting luminous fluxes condensed by the lenses and light-blocking portions blocking the luminous fluxes condensed by the lenses are arranged alternately in the first direction;

a polarization beam splitter array in which first polarization beam splitters and second polarization beam splitters are arranged alternately in the first direction, each first polarization beam splitter reflecting a first polarized light out of transmitted light through the light-transmitting portion and transmitting a second polarized light out of the transmitted light, the polarization direction of the second polarized light being rotated by substantially 90 degrees from the polarization direction of the first polarized light, each second polarization beam splitter reflecting the first polarized light reflected by the first polarization beam splitter in a direction substantially parallel to the transmitting direction of the second polarized light;

a plurality of wave plates which rotate the polarization direction of the transmitted light substantially 90 degrees and are provided such that the polarization direction of the second polarized light from the first polarization beam splitters and the polarization direction of the first polarized light from the second polarization beam splitters are aligned with each other;

a light modulator which modulates incident light; and

a projection optical system which projects modulated light by the light modulator[[.]],

wherein each light-blocking portions of the mask and each of the wave plates are opposed to each other on both sides of the polarization beam splitter array.

14. **(previously amended)** An image display system comprising:

the projection display apparatus according to claim 13; and a screen which has a projection surface.